last war in Egypt was so complete in this respect that not a single case of infective wound disease occurred during the whole campaign.

"As a temporary dressing, some form of antiseptic occlusion will prove most generally applicable. The small wounds of entrance and exit render this plan comparatively easy of application, and the chances of septic infection will be diminished by the less frequent necessity for probing or searching for a lodged projectile, and, indeed, the ascertained presence of the bullet is no sufficient indication *per se* to attempt its removal. The eye, rather than the hand, is the best thing to employ at a first dressing station, as Fischer has well said.

"If only asepticity can be ensured—and this is the great difficulty—we may expect a large measure of success to follow the treatment of wounds of the soft parts, many forms of fracture—notably also wounds of the joints, and very especially wounds of the lung."

SECTION OF PUBLIC MEDICINE.

The proceedings in this Section were opened by Mr. Ernest Hart, who delivered an address on "Public Health Legislation and the Needs of India." Mr. Hart strongly criticised the whole system of the sanitary service and the medical service of India, and held that it needs to be overhauled and reconstituted.

"What is urgently needed," he said, "is a Royal Commission or strong Departmental Committee to inquire into the whole matter, and to institute a radical change. For at present India is decimated by preventable diseases; the health of our troops is ruined by the same causes. With us lies the reproach of nursing and fostering cholera in what is called its endemic home—a purely ignorant and silly phrase. Until some great change is made in the whole system of the present administration, the great sanitary needs of India will never be met."

SECTION OF PHARMACOLOGY AND THERAPEUTICS.

In this Section, under the presidency of Sir William Roberts, there was a discussion on Sero-Therapeutics, embracing the application of serum treatment, not only to the acute infective disorders, but also to the cure of bites from venomous serpents. In his introductory remarks the President drew attention to a hitherto much neglected alkaloid of opium, generally known as "narcotine," but more properly termed "anarcotine," from the complete absence of narcotic properties. A large amount of evidence was available which seemed to show that this alkaloid has very valuable antiperiodic powers, which, should further investigation corroborate, will render it a valuable remedy in certain cases of malaria in which quinine entirely fails. The discussion on Sero-therapeutics was opened by Dr. Klein in a paper on the nature of Antitoxin. He drew attention particularly to the differences in action between a protective serum obtained from animals immunised by injections of filtered diphtheria toxin, and by those treated with living cultures of the diphtheria bacillus. He had found that while the first had an extremely high neutralising power on the chemical poison separated from the bacilli, it had not nearly so marked an immunising power. On the other hand, an antitoxin prepared with the aid of living cultures, while it was less active than the other in neutralising toxins, was far more efficacious as an immunising agent. He also gave brief hints on the advantage of using a dried serum in place of the usual liquid form, and stated that the use of the former was far less likely to be followed by the appearance of rashes and other complications.

OTHER SECTIONS.

Dr. Mickle, President of the Section of Psychology, delivered an address on the abnormalities occurring in the form and arrangement of brain convolutions. The Section of Physiology was opened by Dr. Ferrier with an address on the relations of physiology and medicine. In the Section of Anatomy and Histology, Mr. Henry Morris, in his presidential address, gave a brief history of the rise of artistic illustration in its relation to anatomical teaching.

The presidential address in the Section of Pathology and Bacteriology was delivered by Dr. Samuel Wilks, F.R.S. In the course of his remarks he drew attention to the fact that every pathological process is accompanied by a corresponding reparative process, and lamented that sufficient regard had not been paid to the distinction between these constructive and destructive processes. To study these for the sake of discovering the several influences exerted in the production of each is of great practical import; and a consideration of them also shows that pathology is governed by the same laws as those which exist in every other department of nature, and therefore must take its place on an equivalent footing with the other sciences.

Mr. H. Power, the President of the Section of Ophthalmology, remarked on the work that had been done by the founders of ophthalmology in the past, and the gradual formation of a scientific branch of medicine, of which the methods of diagnosis and treatment were fortunate in being founded on pure science. Owing to its intimate relations with the other branches of medicine and surgery there was no danger of its separating from the parent stem and becoming barren; at the same time he advocated a sounder education in the sciences on which ophthalmology was established, such as mathematics and physics, being required of all candidates for ophthalmic posts in hospitals.

BACTERIOLOGICAL EXHIBITS.

A collection of exhibits brought together to illustrate points of general pathological interest was on view during the meeting. Bacteriological exhibits made up one of the departments of the temporary museum thus formed. Dr. Cautley exhibited cultures and coverglass preparations of an organism found in seven out of eight cases of the affection usually termed influenza cold. It was of special interest and importance as showing, first, that the disease in question is microbial in origin, thus explaining the frequency with which such colds affect all the members of a household; secondly, that it possesses a certain relationship to epidemic influenza. The biological characteristics indicated that the organism is allied to the organism of epidemic influenza. Morphologically the organism presented a further point of interest, many club-shaped forms, similar to those of the diphtheria bacillus, appearing in the specimens. Some excellent photographs of the specimens accompanied the exhibit, and were taken by Mr. E. C. Bousfield.

The cultivations from the laboratories of the Conjoint Board of the Royal College of Physicians, London, and of the Royal College of Surgeons, England, were permanently fixed by formic aldehyde. This substance arrests the growth almost at once, and after the lapse of two or three days kills the bacilli. Various organisms in culture illustrated this method, and showed its applicability to museum and other specimens.

Drs. MacFadyen and Hewlett exhibited from the Bacteriological Department of the British Institute of Preventive Medicine a complete series of cultures of the most important micro-organisms, and Mr. Joseph Lunt exhibited living cultures of various water organisms isolated from drinking water, sewage, air, &c., together with some interesting instances of enzymes filtered from both cultures of various organisms, possessing liquefying and other properties similar to those possessed by the parent organisms.

Dr. Klein showed a large number of photographic lantern slides representing nearly all known pathogenic bacteria, and, amongst others, duplicates of Mr. Bousfield's work for the influenza and cholera reports, the latter especially showing vibrios with their flagella with wonderful clearness.

SCIENCE IN THE MAGAZINES.

FOUR short papers on Huxley appear in the *Fortnightly Review*. The Hon. G. C. Brodrick, Warden of Merton College, Oxford, records some personal reminiscences of the man whose loss is so keenly felt. It appears that about thirty-seven years ago, when a Linacre Professorship of Physiology, coupled with Human and Comparative Anatomy, was founded, Huxley meditated becoming a candidate for the chair. Before the election took place, however, he made up his mind not to seek the office, which was awarded to the late Prof. Rolleston. The reason he assigned was that his opinions were too little in harmony with those prevalent at Oxford. This opinion he again gave, but with diminished emphasis, when he was asked, twenty years later, to accept the chair, upon the death of Prof. Rolleston. His work for the advancement of anthropology forms the subject of a note by Prof. E. B. Tylor. "Close upon the end of his life," says Prof. Tylor, "Huxley did his best to promote the scheme to make anthropology at Oxford an examination subject for an Honours degree in Natural Science. Writing to me, he said, "If I know anything about the matter, anthro-

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pology is good as knowledge, and good as discipline.' But Convocation thought he did not, 'know anything about the matter,' and threw out the proposed statute." Huxley's career as biologist is sketched by "A Student of Science." The following is worth quoting from that contribution. "It was characteristic of the Professor's general mental attitude that mere novelty never affrighted him. When Ramsay propounded his theory of the excavation of lake basins by glacial action, Huxley supported it, even against the opposition of Lyell and Falconer. Suppose St. Paul's Cathedral removed from its present site to any part of the North Sea, the English Channel, or the Irish Sea, and the whole dome would be clear out of water. Place it, on the other hand, on the flow of Loch Lomond, and the largest ship in the British Navy might float safely over the golden ball, for the Loch has a maximum depth of 630 feet. Sir Andrew Ramsay's theory explains a striking fact like this, and affords undoubtedly a rational explanation of many similar phenomena." The fourth of the papers treats of Huxley as philosopher, and is by Mr. W. L. Courtney, the editor of the *Fortnightly*. Under the title "The Spectroscope in Recent Chemistry," Mr. R. A. Gregory contributes to the same review a brief history of the discovery of argon and helium, and discusses the many interesting points raised by the advent of those two new terrestrial elements, especially with reference to their spectra. It is worthy of contemplation that, so far as instrumental possibilities go, both argon and helium could have been discovered spectroscopically many years ago, and Lord Rayleigh would have been saved his years of tantalising experimentation. And yet there are some who think that the spectroscope will not help much more in the extension of natural knowledge!

The evolution of the orator and poet, actor and dramatist, is traced by Mr. Herbert Spencer in his fourth paper on "Professional Institutions," which appears in the *Contemporary*. First in his story of development comes the orator, who proclaimed the great deeds of a victorious chief during the triumphal reception; then was evolved, through natural selection, the poet, who, with picturesque phrases and figures of speech, gave rhythm to the laudatory speeches. Gradually the orator or poet joined with his speeches mimetic representations of the achievements of the living or the apotheosised ruler, or else they were simultaneously given by some other celebrant. So the actor was produced, and as more complex incidents came to be illustrated by speech and action, it was necessary for one to arrange the parts to be played, and thus the dramatist was developed. In support of this very natural sequence, Mr. Spencer adduces a variety of evidence supplied by uncivilised races and by early civilised races. Another paper in the *Contemporary* consists of extracts from Mr. E. A. Fitzgerald's journal of his ascents of virgin peaks in the New Zealand Alps. Five new peaks were ascended, namely, Sealy, Silberhorn, Tasman, Haidinger, and Sefton, the Matterhorn of the range. He also discovered a pass which has received his name, and across which the range has now been traversed to the west coast. Several attempts had previously been made to find such a route, but unsuccessfully. Mr. Fitzgerald's paper will therefore not only be read with interest by lovers of Alpine adventure, but will also be valued by the geographer.

The story of Antarctic exploration is told in *Macmillan's Magazine*, and the movement for further researches in those higher southern latitudes is given support. It will be remembered that the efforts made by the Royal Geographical Society, in connection with a committee of the Royal Society, to induce the Government to fit out an expedition for exploring in the Antarctic Ocean, were not successful. Notwithstanding this, the writer of the article expresses the general opinion when he says: "When it is undertaken at all it is desirable that the next Antarctic expedition should be a national one. Private enterprise, which has been splendidly active of late in the way of Arctic discovery, would scarcely be equal to all the demands of extensive and thorough Antarctic exploration."

A passing notice must suffice for the remaining articles of more or less scientific interest in the magazines and reviews received. A brief sketch of the characteristics of Sonya Kovalevsky is given in the *Century*, and one of the concluding sentences reads: "Notwithstanding her solid contributions to applied mathematics, she originated nothing; she merely developed the ideas of her teachers." A number of elementary facts with reference to the transporting power of water and the deposit of sediment, are stated by Mr. W. H. Wheeler in *Longman's Magazine*. The *National* contains an article, by Mr. J. L. Macdonald, on fruit-farming in California, which is worth the attention of agriculturists. In the *Quarterly Review*, roses and rose cultivation are surveyed, though more from an historical than a scientific point of view. An *Edinburgh Reviewer* discusses organic variation and animal coloration, basing his remarks upon Mr. Bateson's "Materials for the Study of Variation" and Mr. F. E. Beddard's "Animal Coloration." In *Good Words* we find an illustrated article by Dr. Bowdler Sharpe, on curious nests of birds, and a paper on the Earl of Rosse and his great telescope, by Sir Robert Ball. *Chambers's Journal* contains, among other instructive articles, one on the U.S. North Atlantic Pilot Chart, and another on "Taka Joli," a new substitute for yeast. Finally we have to acknowledge the receipt of *Scribner's Magazine*, the *Sunday Magazine*, and the *Humanitarian*.

PHOTOMETRIC STANDARDS.

THE following Report of the Committee appointed by the Board of Trade, in December 1891, "to inquire into and report to them upon the subject of the standards to be used for testing the illuminating power of coal gas," has just been published as a Parliamentary paper.

"(1) It was intimated to us, by a letter from the Secretary to the Board, that the method at present in use for measuring the illuminative value of coal gas has been objected to, alike by the Metropolitan Gas Referees and the London County Council, as being of an unsatisfactory nature; that the London Gas Companies are alive to the defects in the present system; and that legislation is admittedly necessary for the purpose of substituting a more trustworthy standard for that now in existence; but that, in view of the difference in opinion as to what the substituted standard should be, the President of the Board deemed it advisable that, before his support was given to any legislation, the whole question should be considered by a Committee that would command the confidence of the various interests affected.

"(2) The method at present in use for measuring the illuminative value of coal gas consists in comparing the light of the gas, when burning from a particular burner at a specified rate, with the light of a sperm candle burning also at a specified rate, which last is taken as a standard. We have satisfied ourselves, from considerations set forth in the Appendix to this Report, that the flame of a sperm candle does not furnish a satisfactory standard, by reason of the amount of light which it affords varying over a wide range, under conditions as to the manufacture of the candle, as to its mode of use, and as to adventitious circumstances attending its use, which, as a whole, it is not possible to regulate and define.

"(3) Though recognising, however, that the sperm candle flame does not furnish a satisfactory standard, we nevertheless consider it advisable that, in official documents and reports, the quantity of light yielded by coal gas burned under specified conditions should continue to be expressed as heretofore, in terms of candle-light, the actual comparison, however, being made between the gas-light and some well-defined and constant light ascertained to be equal in quantity to, or a definite multiple of, the average light given by the standard sperm candle.

"(4) We have further come to the conclusion that, in the present state of experience and knowledge, the source of the light to be used as a standard by gas-testers generally must be produced by the process of combustion, and be in the nature of a flame.

"(5) We find that the one-candle-light flame proposed by Mr. A. Vernon Harcourt as giving a standard light, and commonly known as the 'Harcourt pentane air-gas flame,' when used under the conditions defined, does constitute a very exact standard, capable of being reproduced at any time without variation of illuminative value.

"(6) We have satisfied ourselves that the light given by Mr. Harcourt's above-mentioned pentane air-gas flame as defined, in respect to the conditions of its production, in the Appendix, is a true representative of the average light furnished by the sperm candle flame constituting the present standard. Since 1879, when the pentane air-gas flame was first introduced, many series of experiments have been made by different observers, in which the light of the proposed standard has been compared with the light of the standard sperm candle

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